

SOV/110-59-1-25/28

In the State Scientific-Technical Committee of the Council of Ministers of the USSR

considered. Particularly important questions and decisions will be published in the journal Vestnik Elektromyshlennosti, and in Promyshlennaya Ekonomicheskaya Gazeta.

There are no figures no references.

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SOV/110-59-6-18/24

AUTHOR: Nikitin, P.Z., Engineer

TITLE: A New Standard Series of Induction Motors of 0.6 to 100 kW (Novaya ~~vedinaya~~ seriya asinkhronnykh dvigateley moshchnost'yu ot 0.6 do 100 kvt)

PERIODICAL: Vestnik elektromyashlennosti. 1959. Nr 6. p 69 (USSR)

ABSTRACT: The Scientific Research Institute of the Electro-Technical Industry, in collaboration with a number of electrical engineering works, has proposed a new standard series of induction motors covering the range of 0.6 to 100 kW. Motors of the existing series A and AO were developed ten years ago and are not so good as the corresponding motors of the leading foreign firms. The number of ratings is rather limited and the machines are heavy and large. New insulating materials have recently been developed, including synthetic films for slot insulation and heat resistant enamel for conductors, these can form a basis for the new series of electric motors. A session of the Electrical Machines Commission of the State Scientific Technical Committee of the USSR was held on the 2nd October 1958 and was attended by

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A New Standard Series of Induction Motors of 0.6 to 100 kW

representatives of scientific institutes, motor manufacturers, users and others. The session was opened by the President of the Commission, Doctor of Technical Sciences, Professor G.N.Petrov. I.N.Charakhch'yan read a report on the project for the new series. The motors will, on an average, be 25% lighter and the efficiency will be 1.7% higher; other properties will be maintained at the existing level. The main types of motor that will be included are enumerated. The report was discussed by V.A.Privezentsev, I.D.Kravchik, S.I.Kurochkin, M.M.Zil'bersheyd, L.V.Litvak, R.I.Lastochkin, A.A.Rabinovich, V.I.Kalitvyanskiy, A.M.Kharitonov, P.K.Korkhov, Z.S.Borisevich, A.I.Frushman, N.I.Nasrulayev, A.I.Bertinov, S.A.Shelekhov. It was pointed out that all the electrical calculations were made with a computer, so that it was possible to select the best variants. The introduction of a new series will in the next seven years permit a mean annual economy of about 500 million roubles, of which

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A New Standard Series of Induction Motors of 0.6 to 100 kW

about 215 million roubles will result from economy of materials and 285 million roubles from economy of power. The commission approved the technical project for the new standard series and noted the importance of the work.

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SOV/143-54-11-16.16

8(6)

AUTHOR: Nikitin, P.Z., Engineer

TITLE: New Developments in Power Capacitor Manufacturing in the USSR and Abroad

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, 1958, Nr 11, pp 126-132 (USSR)

ABSTRACT: The application of power capacitors, especially high-voltage capacitors, in power distribution networks and at a number of industrial installations was increased considerably in the USSR and abroad. Power capacitors are produced in the USSR since 1933. First, capacitors were manufactured by the experimental workshops of the Kiyevskiy politekhnicheskii institut (Kiyev Polytechnic Institute) and later by the KZETA Electrical Equipment Plant. Prior to World War II, there was no specialized plant manufacturing such capacitors in the USSR. The total capacity of installed high-voltage capacitors amounted to about 0.5 million kvar. A specialized plant for the manufacture of capacitors was opened in 1956. The capacitor output increased ten

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Abroad

times compared to the pre-war level. About 1/4 of the total production were low-voltage capacitors. The capacitor production became a new branch of the Soviet industry. The output of standard-frequency power capacitors must be considerably increased during the next years. Only under this condition it will be possible to comply with the order of the Soviet government requiring all active industrial installations to increase the power factor of their electrical equipment to 0.92-0.95. Regardless to the short period of its existence, the Soviet capacitor industry produces all types of modern capacitors. The critical analysis of the level obtained in the USSR and the comparison of Soviet-made capacitors with the best products of foreign industries will assist in future progress. In this connection the author reviews briefly the development of capacitor manufacture in the USSR, in Germany, Great Britain, France, Belgium and Sweden. In table 1, the author compares various types of power capaci-

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tors of the aforementioned countries with three capacitor types produced by the plant "Kondensator". For these three types he presents the following data: 1) 0.23 kv operating voltage at 50 cps,  $5 + 18$  kvar,  $4.6 + 7$  kg/kvar,  $4.9 + 4.65$  dm<sup>3</sup>/kvar, oil impregnation; 2) 0.4 + 0.595 kv at 50 cps,  $9 + 36$  kvar,  $2.5 + 3.1$  kg/kvar,  $1.6 + 1.9$  dm<sup>3</sup>/kvar, diphenylchlorate impregnation (Khlordifen); 3) 3.15 + 10.5 kv at 50 cps, 10 kvar, 2.3 kg/kvar, 1.48 dm<sup>3</sup>/kvar, oil impregnation. The author states that the oil impregnated capacitors of the plant "Kondensator" have better specific characteristics than the foreign cosinus capacitors. Also the electrical characteristics of the Soviet-made capacitors are considerably better. The loss-angle tangent does not exceed 0.003 and its spread is limited between individual production series. Regardless to the achievements of the Soviet capacitor industry in developing and manufacturing capacitors for the direct-axis balancing of the 400 kv power

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line Kuybyshev - Moscow, or 150 and 300 kv high-capacitance pulse capacitors and a considerable enlargement of the assortment of cosinus power capacitors, one may not say that the Soviet capacitor industry is on an advanced level. Concerning a number of design and technological problems, the Soviet capacitor industry is less advanced than some foreign firms. Individual foreign enterprises produce more perfected capacitors for improving the cos seen from the viewpoint of reliability and specific characteristics. The author discusses the application of different dielectrics, transformer oil, pyranol, clophen, etc, and presents the properties of these materials in table 2. He states that the ordinary transformery oil should not be used in capacitors working in the southern areas of the USSR, because additional cooling is required. He reviews the experience made in Germany, in the USA and other countries with capacitor dielectrics. At the plant "Kondensator" there is a

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small experimental workshop with special equipment for impregnating capacitors with diphenylchlorate. However, there are three reasons because of which the latter is not applied on a large scale: 1) The Soviet chemical industry does not produce this material, 2) there is an exaggerated fear of the toxicity, and 3) the available impregnating equipment is not designed for application of materials with toxic properties. Therefore, the oil filled capacitors produced by the plant condensator have larger dimensions compared to foreign models using a different dielectric. Figure 1 shows a comparison of the dimensions of a EMV 125 kvar capacitors with a 230 kvar pyranol-filled capacitor of "General Electric" and a 10 kvar KM capacitor with a 15 kvar pyranol-filled "General Electric" capacitor. Although the capacitor production is a rather new branch of the USSR electrical industry, a number of problems must be solved connected with the production of new series of capacitors for improving the

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power factor. Figure 2 shows capacitors of a new series of types KM-0.4-8-3, KM-0.4-10-3, KM-6.3-12-1, and KM-6.3-24-1. The series of power factor capacitors will be produced in two categories with capacitances ranging from 6 to 24 kvar for voltages of 230 to 10,500 volts. A third category was developed for the direct-axis balancing of the power lines Kuybyshev - Moscow, having a capacitance of 40 kvar at 400-525 volts and 50 kvar at 3.1 and 6.3 kv. These capacitors are designed for open-air installation. Finally, the author mentions capacitors for higher frequencies of type EMV. They are presently designed for oil impregnation but in the future some other dielectric will be used whereby their capacitances will be increased by 40-60%. At a frequency of 2,000 cps their capacitance will be approximately 200 kvar

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and at 8,000 ops around 200 kvar. There are 10 photographs and 3 tables.

ASSOCIATION: Gosudarstvennyy nauchno-tekhnicheskiy komitet  
Ministroy SSSR (State Scientific-Engineering Committee of the USSR Council of Ministers)

Card 7/7

KOCHKIN, M.S., inzh.; NIKITIN, P.Z., inzh.

Conference on the manufacturing of glass insulators. Elek.sta.29 no.5:  
91-92 My '58. (MIRA 12:3)  
(Electric insulators and insulation)

NIKITIN, P.Z.; KOST'YEV, N.K.; BORISEVICH, Z.S.

Second Conference on Blastproof Electrical Equipment. Prom.energ.  
17 no.5:54-55 My '62. (MIRA 15:5)  
(Electric engineering—Safety regulations)  
(Donetsk—Congresses)



GURARI, N., inzh.; NIKITIN, R.

Screw conveyer for meat cuts. *Mias. ind.* SSSR 29 no. 4:9-10 '58.  
(MIRA 11:8)

1. Gipromyaso.

(Packing houses--Equipment and supplies)  
(Conveying machinery)

38209. NIKITIN, S. A.

Lesorastitel'nyye usloviya gosudarstvennoy i zashchitnoy lesnoy polosy  
gora Eishnevaya - Chkalov - Ural'sk - Kaspiyskoye more. Les i step',  
1949, No 8, s. 33-42



NYKITIN, S. A.

Afforestation

Using, afforesting and binding sand in the European part of the USSR. *Izuch. zap. palezashch, les. no. 1, '51*

9. Monthly List of Russian Accessions, Library of Congress, July 195<sup>3</sup><sub>8</sub>, Uncl.

NIKITIN, S.A.

USSR/ Scientists - Economics

Card 1/1 Pub. 45 - 16/16

Authors : Gerasimov, I. P.; Ivanova, E. N.; Larin, I. V.; Nikitin, S. A.; Sozykin, N. K.; and Fridland, V. M.

Title : Memories of I. I. Folimonov

Periodical : Izv. AN SSSR. Ser. geog. 6, 108 - 109, Nov - Dec 1954

Abstract : In announcing the death on 22nd June 1954 of Ivan Isodorovich Folimonov (1880 - 1954) the life history and work of this economist is recalled. Folimonov is said to have also been an outstanding naturalist well informed in agriculture. He distinguished himself as a research worker, teacher and writer.

Institution: .....

Submitted: .....

NIKITIN, S.A.; YANYK, N.V.

Vladimir Petrovich Filatov; on his 80th birthday. Izv.AN SSSR.Ser.  
biol. no.3:132-136 My-Je '55. (MLRA 8:7)

(BIOGRAPHIES,

Filatov, Vladimir P.)

USSR/Biology - Botany

Card 1/1 : Pub. 86 - 34/35

Authors : Nikitin, S. A., Cand. Biol. Sc.

Title : "Saksaul" (Haloxylon) forests of the Kara-Kum Desert

Periodical : Priroda 44/2, 125 - 126, Feb 1955

Abstract : A review is made of the book, "Saksaul Forests of the Kara-Kum Desert", by V. L. Leont'ev, published as part of the Popular Science Series, by the Publishing Office of the Academy of Sciences of the USSR, in 1954, and containing 92 pages. The book deals with the possibility of utilizing this tree, "Saksaul" (scientific designation: Haloxylon), which is a small leafless growth found in the saline, sandy soils of the Central Asiatic region.

Institution : .....

Submitted : .....

USSR / Forestry. General Problems.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29510.

Author : Nikitin, S. A.

Inst : Forestry Institute of the Academy of Sciences  
USSR.

Title : Plant Conditions in the Forest Land of the Lower  
Part of the Ural River. (Lesorastitel'nyye uslo-  
viya nizoviy reki Ural).

Orig Pub: Tr. in-ta lesa AN SSSR, 1956 (1957), 34, 7-273.

Abstract: An exact description is given of the physico-geo-  
graphical conditions, the geomorphological fea-  
tures, the soil and hydrological conditions of  
the lower part of the Ural River. An important  
local climatic peculiarity is the alternation in  
moist and dry years which causes cycles in the  
river's water pattern, variations in temperature

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USSR / Forestry. General Problems.

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29510.

Abstract: and amount of precipitation. The chief local soil diversities are distributed in 13 groups in relation to the need of agricultural measures of preparing these for forest cultures. The tree growth of the central portion of the valley are united according to the features of species composition and the nature of the forest plant conditions of the inhabitants in 4 groups, namely woods on natural gullies, on bottom land, on sand and in artificial protective placements (a detailed typological, forestry and valuation survey characteristic is drawn of plantings of each group, as well as ecological peculiarities of the principal species). Note is taken of three to four still unstudied breeds of white willow. On the basis of natural and forest floral con-

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USSR / Forestry. General Problems.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29510.

Abstract: ditions, the lower stretch of the Ural River valley is divided into 5 rayons: Ural'sko-Budarinskiy, Budarinsko-Mergenevskiy, Mergenevsko-Kruglovskiy, Kruglovsko-Inderskiy, Indersko-Topolinskiy. There is presented for each rayon: the species composition of the woods, basic forest types with data on the valuation, ecology and history, as well as cross level profiles which give some idea of the peculiarities of forest flora. The reduction in area covered by forests in the lowland valley of the Ural River, the drop in productivity and worsening in the tree stand composition are explained by the increasingly arid climate in the relatively narrow floodlands of the southern rayons, by the maximal levels of flooding which

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USSR / Forestry. Forest Crops.

K-5

Abs Jour: Ref Zhur-Biol., No 16, 1958, 72829.

Author : ~~Nikitin, S. A.~~

Inst : Institute of Forestry, AS USSR.

Title : Shelter Belts of the Transural Steppes.

Orig Pub: Soob. In-ta lesa, AN SSSR, 1957, vyp. 8, 13-21.

Abstract: It is pointed out that in the Transural steppes, the forest-plant conditions are significantly more severe than in the Cisural and Transvolga, with which this region is joined through the introduction of shelterbelts. A majority of plantings died, which were created in a series of Transural regions in 1882-1909 without consideration of the conditions of local vegetation and bioecological properties of the species. Tree species decrease in growth and begin to dry out in the steppe zone from 12-20 years

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NIKITIN, S.A.

NIKITIN, S.A.

Forest vegetation conditions in the lower Ural Valley. Trudy Inst.  
less 34:7-273 '57. (MLR& 10:6)  
(Ural Valley--Forests and forestry)

AUTHOR: Ivanov, V.V.

12-1-19/26

TITLE: None Given

PERIODICAL: Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, 1958,  
# 1, pp 91 - 93 (USSR)

ABSTRACT: This is a critical review of a book "The Forest Vegetation of the Transuralian Steppes (Lesnaya rastitel'nost' stepnogo Zaural'ya) by S.A. Nikitin, a well known expert of the Caspian steppes and deserts. The book contains valuable data on unexplored forest areas, characteristics of herbal growth and of brushwood over a large territory.

The reviewer considers this book to be a most valuable work and regrets that it has been published only in a limited number.

AVAILABLE: Library of Congress

Card 1/1

"TEXT", p. 1.

2.197. *Primenenie avtomaticheskikh sistem upravleniya* [Application of automatic control systems].  
Intenol. prom-st<sup>2</sup>, 1949, No. 9, p. 12-22.

10: *Intenol. prom-st<sup>2</sup>* [Intenol. prom-st<sup>2</sup>], vol. 10, Moskva, 1949.



1. NIKITIN, S. A.
  2. USSR (600)
  4. Broaching Machines
  7. Multiple operations on vertical broaching machine. Avt. trakt. prom. no. 9, 1952.
9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

12(0)

SCV/113-59-3-11/12

AUTHOR: Nikitin, S.A.

TITLE: Modern Overhead Transport Conveyers (Sovremennyye transportnyye podvesnyye konveyery)

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 4, pp 34-37, (USSR)

ABSTRACT: The author explains the advantages of overhead conveyers in the automobile industry where lifting-transporting and storing operations require about 30% of the total of production workers employed. Overhead conveyers may be used for continuous or intermittent transporting of parts or assemblies and side tracks may be used for storing parts. The parts stored on an overhead conveyer are readily available for assembly. Using the storage tracks, it is possible to combine machine tools and shops of different productivity or output without encountering difficulties on the main assembly conveyer. The author then describes in detail a version of a pusher-type trolley conveyer

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Modern Overhead Transport Conveyers

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developed by the Khar'kovskoye proyektno-konstruktor-skoye otdeleniye tresta "Soyuzprommekhanizatsiya" (Khar'kov Project and Design Department of "Soyuzprommekhanizatsiya" Trust), where each trolley has a load capacity of 500 kg. It consists of two sections. The lower trolley carrying the part to be transported runs on two U-beams as shown by Figure 1. The so-called pusher conveyer is located above the trolley, whereby provisions are made to stop one trolley by disengaging the connection to the pusher without stopping the drive. Figure 2 shows an electrically controlled switch to a branch conveyer. Figures 4, 5 and 6 show possible arrangements of conveyer systems, drives and switches. Figure 7 shows the suspension of an engine for assembly on a pusher-type conveyer. In conclusion the author states that this type conveyer (and other chain-driven trolley conveyers) are rather expensive, since 100 m cost 57,000 rubles without electrical equipment. Therefore he refers to a rope trolley conveyer developed

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Modern Overhead Transport Conveyers

SCV/113-50-3-11/17

by Giproavtoprom shown by Figure 1, which is about 40% cheaper than the chain or pusher-type conveyor. However, the load capacity is only 30 kg. There are 6 drawings and 2 photos.

ASSOCIATION: Giproavtoprom

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NIKITIN, S.A.

Automatic multiple-spot in assembling body units at automobile  
plants in England. Adv.prom. no.12:29-31 D '60. (MIRA 13:12)  
(Great Britain--Automobile industry)  
(Great Britain--Electric welding)

WIKITIN, S. A.

Organization of Soviet motor-vehicle assembly plants. Avt.  
prom. 28 no.6:1-3 Je '62. (MIRA 16:4)

1. Gosudarstvennyy institut po proyektirovaniyu zavodov avto-  
mobil'noy promyshlennosti.

(Automobile industry)

NIKITIN, S.A.

Lminent objectives in the field of further specialization  
in the motor-vehicle industry. Avt. prom. 28 no. 7:1-5 J1 :62.  
(MIRA 16:6)

1. Gosudarstvennyy institut po proyektirovaniyu zavodov  
avtomobil'noy promyshlennosti.

(Motor vehicles--Design and construction)

NIKITIN, S.A.

Principles for organizing a motortruck assembly plant. Avt.prom.  
28 no.12:1-5 D '62. (MIRA 16:1)

1. Gosudarstvennyy institut po proyektirovaniyu zavodov  
avtomobil'noy promyshlennosti.  
(Motortrucks)

NIKITIN, S.A.

Magnetic and hysteresis properties of dysprosium and terbium.  
Fiz. met. i metalloved. 15 no.2:187-193 F '63.  
(MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.  
(Dysprosium—Magnetic properties)  
(Terbium—Magnetic properties)

NIKITIN, S.A.

Reorganization of the Yaroslavl Automobile Plant. Avt.prom. 29 no.2:  
1-4 F '63. (MIRA 16:2)

1. Gosudarstvennyy institut po proyektirovaniyu zavodov avtomobil'noy  
promyshlennosti.

(Yaroslavl--Automobile industry)

BELOV, K.P.; NIKITIN, S.A.; PED'KO, A.V.

Shift of the ferromagnetism - antiferromagnetism transition point  
in dysprosium under hydrostatic stress. Zhur. eksp. i teor. fiz.  
45 no.2:26-28 Ag '63. (MIRA 16:0)

1. Moskovskiy gosudarstvennyy universitet.  
(Dysprosium--Magnetic properties)  
(High-pressure research)

ACCESSION NR: AP4023400

S/0048/64/028/003/0519/0528

AUTHOR: Belov, K.P.; Levitin, R.Z.; Nikitin, S.A.; Ped'ko, A.V.

TITLE: Magnetoelastic properties of rare earth ferromagnetic materials [Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.3, 1964, 519-528

TOPIC TAGS: magnetostriction, rare earth magnetostriction, magnetoelasticity, rare earth magnetoelasticity, rare earth exchange anisotropy, helical antiferromagnetism

ABSTRACT: The magnetostriction, the temperature dependence of the elastic moduli, and the effect of hydrostatic pressure on the magnetization, are discussed in some detail for a number of rare earths. The experimental data for the discussion are taken from a number of sources. These magnetoelastic properties are of interest because they involve a combination of exchange and magnetic interactions, and their behavior may shed some light on the complex magnetic properties of these materials. In the range of temperatures and fields in which the materials are ferromagnetic, the magnetostriction constants of Dy and Tb are large, and the two constants (for

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the same material) are of opposite sign. The magnetostriction is due primarily to rotation of the magnetic moment in the basal plane against magnetic anisotropy forces. The magnetostrictive behavior of Gd is very complex and is not understood. In the range of temperatures and fields in which Dy exhibits helical antiferromagnetism its magnetostrictive behavior is complex. A simple theory of magnetostriction is developed, in which the magnetic anisotropy in the basal plane is neglected (presumably a reasonable approximation in the temperature range considered) and the exchange interactions between neighboring basal planes and between next-neighboring basal planes are assumed to be different linear functions of the strain in the hexagonal axis (i.e.; of the distance between the basal planes). This theory accounts qualitatively for the complex behavior observed. Unlike the behavior of magnetostriction in the iron group, the magnetostriction of Dy and Tb is anisotropic even very close to the Curie point. This indicates that the exchange interaction in these materials is anisotropic. The anisotropy of the exchange interaction is also indicated by the fact that the shear modulus of Dy has the same type of anomaly at the Curie point as has Young's modulus. The ferromagnetic-antiferromagnetic transition point of Dy is shifted to lower temperatures by the application of hydrostatic pressure. The transition of polycrystalline Gd at 210°C behaves similarly. After a short thermo-

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dynamic discussion it is concluded from this that the exchange interaction between the basal planes (i.e., along the hexagonal axis) depends sharply on distance. This, and other properties of the exchange interaction revealed by magnetoelastic behavior, is not easy to understand on the basis of current theories, according to which the exchange interaction in these materials is indirect, via the conduction electrons and the  $5s^2$  and  $5p^6$  bands. Orig.art.has: 10 formulas and 6 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: OO

DATE ACQ: 10Apr64

ENCL: OO

SUB CODE: PH

NR REF SOV: 007

OTHER: 014

Card 3/3

BELOV, K.P.; LEVITIN, R.Z.; NIKITIN, S.A.; IED'KO, A.V.

Magnetoelastic properties of rare earth ferromagnetics. Izv.  
AN SSSR. Ser. fiz. 28 no. 3:519-528 Mr '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet.

BELOV, Konstantin Petrovich; BELYANCHIKOVA, Marianna Aleksandrovna;  
LEVITIN, Rudol'f Zinov'yevich; NIKITIN, Sergey Aleksandrovich;  
GUSEV, A.A., red.

[Rare-earth ferromagnetics and antiferromagnetics] Redko  
zemel'nye ferrimagnetiki i antiferrimagnetiki. Moskva, Nauka,  
1965. 319 p. (MIRA 19:1)

ACC NR:

AM6000489

Monograph

UR/

Belov, Konstantin Petrovich; Belyanchikova, Marianna Aleksandrovna; Levitin, Rudol'f Zinov'yevich; Nikitin, Sergey Aleksandrovich

Rare-earth ferromagnets and antiferromagnets (Redkozemel'nyye ferromagnetiki i antiferromagnetiki) Moscow, Izd-vo "Nauka", 1965, 319 p. illus., biblio. 4,000 copies printed.

Series note: Sovremennyye problemy fiziki

TOPIC TAGS: rare earth metal, ferromagnetic material, antiferromagnetic material, ferromagnetism, ferrite, antiferromagnetism

PURPOSE AND COVERAGE: Based on the published Soviet and foreign works of students and engineers, a survey is given of the present state of theoretical and experimental studies of ferromagnetism and antiferromagnetism of rare earth metals, alloys and compounds. Also shown are the results obtained by the author. This book is recommended for scientists working with magnetism and solid physics as well as for physicists, chemists, and engineers in research and application of magnetic materials. It can also be useful to aspirants and students in advanced courses of related specialties.

Card 1/2

UDC: 538.221

2/2

NIKITIN, S. *AP*

*CR*

*a*

Studies on x-ray sensitization. II. Chemical sensitization of simple organisms. S. A. NIKITIN. *Zhur. ekspt. Biol. Med.* 11, 28-33 (1929). Free living protozoa are not sensitive to x-rays, reported results to the contrary are ascribed to faulty technique. X rays have no visible action on the rhythm of division of *Paramecium caudatum*.

III. Sensitizing effect of thorium nitrate. *Ibid.* 34-40. The effect of  $\text{Th}(\text{NO}_3)_4$  and x-rays is not due to emission of secondary radiations and electrons but to a summation of the poisonous action of the  $\text{Th}(\text{NO}_3)_4$  and the noxious action of the x-rays. S. M.

ALSO SEE METALLURGICAL LITERATURE CLASSIFICATION

NIKITIN, G. [A.]

"Paths of Development and Present State of the Doctrine of the  
of X-Rays," Esp. Sov. Pol., 11, 1954, 1-10, 1954.

NIKITIN, S.A., professor.

Relation between the condition of the dental pulp and hard tissues.  
Stomatologiya no.6:11-15 '53.

(MLBA 7:1)

1. Iz patofiziologicheskogo otdela Ukrainskogo nauchno-issledovatel'-  
skogo instituta stomatologii (direktor - kandidat meditsinskikh nauk  
M.I.Kukhareva).

(Teeth)



NIKITIN S. A. and BUGAYEVA M. G.

\* Experimental caries in white rats (Russian text) STOMATOLOGIJA 1954/1 (9-17) Illus. 6

The generally used caries-producing diets are unable to produce any caries lesions in white mice. A diet poor in lysine and arginine and vit. B<sub>1</sub>, but rich in carbohydrates, did not produce caries in white rats, while a diet containing all necessary substances for maintaining life processes but of a denatured and alien composition in comparison with the ordinary food of animals, quickly produces enamel caries especially in female white rats. The second litter from a mother held on a caries-producing diet will have a 100% more pronounced caries disposition than rats from healthy parents.

Eggers Lura - Holbaek

SO: Excerpta Medica Section II Vol 7 N. 12

ption was determined 1-24 hr. later. The greatest amount (introduction with the ant. chamber) was found in the cornea and iris, and in the aqueous humor; it disappeared from the ant. chamber 24 hr. later. Only traces of the isotope were found in the vitreous body and the optic nerve. When <sup>32</sup>P was introduced into the vitreous body it accumulated in a marked amount in the lens, ant. chamber, cornea and sclera. The movement of humours in the eye is discussed. (Russian)  
G. FEOLER

NIKITIN, S.A., professor.

Experimental amphodontosis (parodontosis) and the methods of producing it. Stomatologiya, no.6:3-11 N-D '55. (MLRA 9:5)

1. Iz patofiziologicheskogo otdela Odesskogo stomatologicheskogo instituta (dir.-starshiy nauchnyy sotrudnik M.I. Kukhareva.

(PERIODONTIUM, dis.  
periodontitis, exper., review)

NIKITIN, S.A., professor; TRONOVA, O.S., nauchnyy sotrudnik

Materials on the comparative pathology of the jaws and teeth structure.  
Stomatologiya 35 no.3:3-8 My-Je '56. (MLRA 9:9)

1. Iz patofiziologicheskogo otdela Odesskogo nauchno-issledovatel'-  
skogo stomatologicheskogo instituta (dir.-starshiy nauchnyy sotrudnik  
M.N.Kukhareva)

(PATHOLOGY, COMPARATIVE)

(TEETH--DISEASES)

(MOUTH--DISEASES)

NIKITIN, S.A., professor; BUGAYEVA, M.G., starshiy nauchnyy sotrudnik.

Peculiarities of the development of tooth decay in laboratory rats during a prolonged diet which favors dental caries.

Stomatologiya 35 no.6:3-7 N-D '56

(MLRA 10:4)

1. Iz patofiziologicheskogo otdela Odesskogo nauchno-issledovatel'skogo instituta stomatologii (dir.-strashiy nauchnyy sotrudnik M.N. Kukhareva)

(DIET) (TEETH--DISEASES)

NIKITIN, Sergey Andreyevich; CHERBOTAREV, Ye.Ye., red.; DAUSHKOVA, A.A.,  
tekhred.

[Introduction to radiobiology] Vvedenie v radiobiologiyu.  
Kiev, Gos. med. izd-vo USSR, 1958. 183 p. (MIRA 12:1)  
(Radiobiology)

NIKITIN, S. A.  
CA

Types of salinized soils of the southeastern part of the Caspian Plain S. A. Nikitin. *Podology* (U. S. S. R.) 1941, No. 9, 3 25 -N. correlates the types of saline soils with the geol. deposits of the area. He presents data on the compn. of the ground waters and of the rivers in the various sections of the region and shows how the data fit the compn. of the various soil profiles examd. and analyzed. The type of saline soil is in a measure detd. by the topog-raphy, depth of water table, and the compn. of waters. Descriptions and compn. of a no. of profiles and the vari-ability in the process of salinization and desalination and of degradation and regeneration of saline soils are pre-sented in detail J. S. Joffe

ASH S L A METALLURGICAL LITERATURE CLASSIFICATION

REGIONAL STUDIES

SOILS

REGIONAL STUDIES

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NIKITIN, S. A.

62/49T1

USSR/Botany - Vegetation, Desert  
Grazing

Sep/Oct 48

"The Vegetation of Gravelly, Sandy Deserts,"  
S. A. Nikitin, 14 pp

"Byul Mosk Obshch Ispyt Prirod, Otdel Biol"  
Vol LIII, No 5

Approximately 16-18 million hectares of gravelly, sandy deserts make up one fourth the total area of sandy deserts, 70 million hectares. Complete analysis of the vegetation of these areas indicated that they contain valuable pasture reserves for commercial livestock-raising in the Central Asia republics.

62/49T1

~~NIKITIN, Sergey Aleksandrovich~~; KRAVCHENKO, Z.I., redaktor; GUREVICH,  
M.M., tekhnicheskii redaktor

[Sunflowers] Podsolnechnik. Moskva, Gos. izd-vo sel'khoz.  
lit-ry, 1957. 159 p. (MLRA 10:4)  
(Sunflowers)



NIKITIN, S., agronom

Using sunflower stalks and heads for silage. Nauka i pered. op. v  
sel'khoz. 8 no.8:17 Ag '58. (MIRA 11:10)  
(Sunflowers) (Ensilage)

NIKITIN, S., agronom

From each hectare 184 centners of ear corn. Nauka i pered.op.v  
sel'khoz. 9 no.1:46-47 Ja '59. (MIRA 13:3)  
(Cron(Maize))

NIKITIN, S., agronom

New practices in cultivating sunflowers. Nauka i pered.op.v  
sel'khoz. 9 no.8:59 Ag '59. (MIRA 12:12)  
(Sunflowers)

NIKITIN, S.A., agronom.

Soya as a feed crop in the central non-Chernozem strip. Zhivotnovodstvo  
21 no.2:35-37 F '59. (MIRA 12:3)

(Soybean)

NIKITIN, S.A.

Classifying the vegetation cover of semideserts. Vop.  
geog. no. 48:194-204 '60. (MIRA 13:7)  
(Steppe flora)

84121

S, 070/60/005/005/007/017

E132/E360

9.2571

AUTHORS: Belov, K.P. and Nikitin, S.A.

TITLE: Study of the Low-temperature Transformation in a  
Crystal of Manganese Ferrite  $\gamma$

PERIODICAL: Kristallografiya, 1960. Vol. 5, No. 5.  
pp. 726 - 731

TEXT: At about  $-75^{\circ}\text{C}$  in a single crystal of manganese ferrite anomalies in the curves of electrical resistance and galvanomagnetic effect against temperature have been discovered. These must be connected with the existence of a low-temperature transition. The electrical and magnetic properties of manganese ferrite change less sharply than those of magnetite at this transition. From the energy of activation it is suggested that the low-temperature transition is connected with the exchange of electrons between manganese ions.

It has been suggested by Verwey that the low-temperature transition observed in magnetite is due to the ordering of the two- and three-valent iron ions in the octahedral positions caused by the exchange of electrons (electron diffusion). Single crystals of the ferrites  $\text{MnO} \cdot \text{Fe}_2\text{O}_3$  and  $\text{Fe}_3\text{O}_4$  were made

Card 1/3

84121

S/070/60/005/005/007/017  
E132/E360

Study of the Low-temperature Transformation in a Crystal of  
Manganese Ferrite

There are 8 figures and 12 references: 9 English, 1 French  
and 2 Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni  
M.V. Lomonosova (Mowcow State University imeni  
M.V. Lomonosov)

SUBMITTED: November 11, 1959

Card 3/3

69703

S/126/60/009/03/029/033  
EO32/E414

24.2200

AUTHORS: Belov, K.P. and Nikitin, S.A.

TITLE: Temperature Dependence of Spontaneous Magnetization in  
a Monocrystal of a Manganese Ferrite in the Low  
Temperature Region

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 3,  
pp 470-472 (USSR)

ABSTRACT: Recent work (Ref 1 to 5) on the quantum mechanical  
theory of the temperature dependence of spontaneous  
magnetization in the case of ferrites near  $0^{\circ}\text{K}$  has led  
to conflicting results. In most cases a  $T^{3/2}$  law was  
obtained while in others the law was found to be  $T^2$ .  
On the other hand, Tyablikov (Ref 3) has shown that  
either of these two laws may hold, depending on the  
origin of the magnetic non-equivalence of the sub-  
lattices. The present paper reports results of  
measurements of the spontaneous magnetization of a  
monocrystal of manganese ferrite, in the temperature  
region  $4.2^{\circ}\text{K}$  to room temperature. The monocrystal was  
in the form of a cylinder 35 mm long and 5 mm in diameter.  
It was grown by A.A.Popova (Ref 7). The easy

Card 1/3



69703

S/126/60/009/03/029/033  
E032/E414

Temperature Dependence of Spontaneous Magnetization in a  
Monocrystal of a Manganese Ferrite in the Low Temperature Region

magnetization direction  $[111]$  was parallel to the axis of the cylinder. The measurements of the magnetization were carried out in a solenoid by a ballistic method. A cryostat (Ref 8) was introduced into the solenoid. The magnetization was measured to  $\pm 1\%$  and the temperature to  $\pm 0.5^\circ$ . Fig 1 shows a plot of the magnetization (at constant temperature) as a function of the applied field. As can be seen from this figure, the saturation magnetization is reduced by  $1/3$  on going from  $4.2$  to  $319^\circ\text{K}$ . Fig 2 shows a plot of the spontaneous magnetization as a function of  $T^{3/2}$ . The dotted curve represents a plot of the spontaneous magnetization as a function of  $T^2$ . It is found that the former relationship is in better agreement with experiment. The slope of the straight line in the case of the  $T^{3/2}$  plot is in good agreement with theoretical calculations (Ref 3 and 4). It is found that the  $T^{3/2}$  law holds right up to temperatures above room temperature, which is in accordance with the results of Dyson (Ref 9),

Card 2/3

69708

S/126/60/009/03/029/033  
EO32/E414

Temperature Dependence of Spontaneous Magnetization in a  
Monocrystal of a Manganese Ferrite in the Low Temperature Region

who showed that the spin wave theory leading to the  
 $T^{3/2}$  law can be extended to temperatures in the range  
between absolute zero and one half of the Curie  
temperature. The Curie temperature for the sample used  
in the present work was 563°K. There are 2 figures and  
9 references, 6 of which are Soviet, 2 English and  
1 French.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im M.V.Lomonosova  
(Moscow State University imeni M.V.Lomonosov)

SUBMITTED: July 13, 1959

Card 3/3

LEVITIN, R.Z.; NIKITIN, S.A.

Magnetoelectric and elastic properties of dysprosium.  
Fiz. met. i metalloved. 11 no.6:948 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova.  
(Dysprosium—Magnetic properties)

247500 (also 1144)

30071  
S. 048 161, 028, 01 1 1 1 1  
B104 B102

AUTHOR: Pelov, K. P., Levitin, R. A., and Nikitin, S. A.

TITLE: Magnetoelastic properties of terbium and gadolinium

PERIODICAL: Akademiya nauk SSSR Izvestiya Seriya fiziko-khimiya  
no. 11, 1961, 1382 - 1384

TEXT: The temperature dependences of the magnetic properties of Dy, Tb, Er, and Gd have a complex character. While being ferromagnetic at low temperatures, they pass over, at a specific temperature  $\theta_1$ , into the antiferromagnetic state with the Curie temperature  $\theta_2$ . The antiferromagnetic state between  $\theta_1$  and  $\theta_2$  can be easily destroyed by an outer magnetic field. For Tb  $\theta_1 = 223^\circ\text{K}$  and  $\theta_2 \approx 234^\circ\text{K}$ . The antiferromagnetic is destroyed by a field of about 200 oersteds. Below  $230^\circ\text{K}$  the modulus of elasticity  $E$  displays a strong anomaly and the inner friction has a maximum at  $230^\circ\text{K}$  (Fig. 1). At the temperatures  $\theta_2$  and  $\theta_1$ , this anomaly passes through a maximum and a minimum, respectively. Longitudinal and transverse magnetostriction of Tb were measured at different temperatures as a function of the Card 1/A2.

10071  
S/045, A/025, I/001, O/001  
R/001, F/001

Magnetoelastic properties of .

field strength ( $\lambda \approx 750 \cdot 10^{-6}$  at 15 koe). The temperature dependence of the modulus of elasticity and of internal friction of Ho was examined near  $\theta_c = 196^\circ\text{K}$  only (Fig. 3). The shear modulus, too, is anisotropic in H.

This proves that not only a pure bulk deformation occurs with the  $\theta_c$  transition. As for Dy, it is known that below  $\theta_c$  the axial ratio of the unit cell changes  $\lambda \approx 1000 \cdot 10^{-6}$  at 15 koe. Neutron diffraction studies showed that Dy in the antiferromagnetic range above  $\theta_c$  has a helical spin structure.

the spins are helically arranged in the lattice. It is believed that other rare earth metals, such as Ho and Tb, also possess this spin structure. There are 3 figures in the paper: 1 Soviet and 1 non-Soviet. The three references to English language publications read as follows: Thokurn W., Legvold S., Spedding F., Rev., 112, 56 (1958); Samister I. R., Legvold S., Spedding F., Rev., 24, 114 (1954); Koenler W., Nollan E., Lecture delivered at a seminar on rare earths elements, USA, California, October 1960.

A. I. L. M.: Fizicheskiy fakul'tet Moskovskogo gos. universiteta, M. V. Lomonosov, Lomonosova Physics Division of Moscow State University, M. V. Lomonosov.

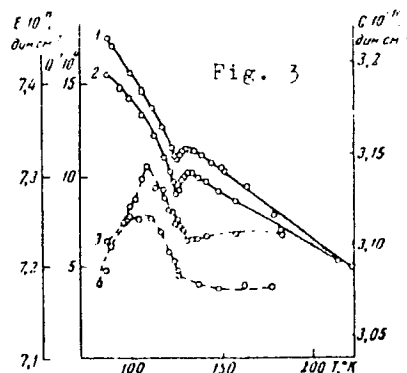
Card 244

Magnetoelastic properties of...

3007  
S/G48/E1/G25/G11/G14/G31  
E104/B102

Fig. 1. Modulus of elasticity  $E$  (curves 1 - 6) and internal friction  $Q^{-1}$  (curve 7) in Tb. Legend: (1)  $H = 0$ ; (2)  $H = 500$  oe; (3)  $H = 1000$  oe; (4)  $H = 1500$  oe; (5)  $H = 2000$  oe; (6)  $H = 2500$  oe; (7)  $H = 0$ .

Fig. 2. Modulus of elasticity  $E$  and internal friction  $Q^{-1}$  of Ho. Legend: (1) shear modulus  $G$ ; (2) modulus of elasticity  $E$ ; (3) inner friction with longitudinal oscillations; (4) inner friction with torsional oscillations.



Ord 3/4

00182

056/61/040/006/001/01

0101/B214

24,7900

AUTHORS: Belov, K. P., Levina, R.Z., Nikitin, S. A., Pedko, A. V.

TITLE: The magnetic and magneto-elastic properties of dysprosium and gadolinium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 6, 1961, 1562 - 1569

TEXT: The interest that is being recently taken in the study of the magnetic properties of rare earths and their alloys is due to the following two causes: a) In some rare earth metals (Dy, Ho, Er, Tb, Tm) there occur complicated magnetic transformations from ferrimagnetic to antiferromagnetic and then to the paramagnetic; b) In some rare earths there are uncompensated electron spins in a shell which is screened by outer 5s and 5p electrons. For this reason the direct exchange interaction between the 4f electrons is very difficult or even impossible. The authors have carried out measurements with the greatest possible accuracy on magnetization, magnetostriction  $\lambda$ , elastic modulus  $E$ , and the inner friction

Card 1/2

25122

S/056/61/040/006/001/01

B\*02/B\*14

The magnetic and magneto-elastic properties of

$Q^{-1}$  of Dy and Gd and obtained them as functions of temperature. The present paper is concerned with the results of these experiments. The measurements were carried near the points  $\Theta_1$  and  $\Theta_2$  and in the region between them ( $\Theta_1$  is the temperature of the ferromagnetic - antiferromagnetic transition and  $\Theta_2$  that of the antiferromagnetic-paramagnetic transition).

The results of the investigations are represented graphically. For Dy,  $\Theta_1$  was found to be 88°K and  $\Theta_2$  175°K. The character of the anomalies of  $E$  and  $Q^{-1}$  for Dy at  $\Theta_2$  is the same as in the antiferromagnetic  $Cr_2O_3$ , i. e.,  $\Theta_2$  is the Neel point. The behavior near  $\Theta_1$  is entirely different: The magnetic field has a strong effect on the Young's modulus  $E$  ( $\Delta E$  effect as well as on  $Q^{-1}$ , the changes of these quantities being irreversible.

Card 2/9



00132

S/056/61/040/006/003/031

B/02/B214

The magnetic and magneto-elastic properties of ...

This means hystereses. These are shown for  $\Delta E$  and  $Q$  for 85° K in Figs. 2 and 3. All this signifies that  $Q$  is not a phase transition point of the second kind, and is in no way related to structural transformations. Fig. 4 shows the temperature dependence of  $D_y$  which shows particular peculiarities near  $Q$ . Firstly, the magnetostriction at this point is unusually high ( $10^{-3}$  at 5,000 oer), and secondly, it is anisotropic. Moreover, there is for each temperature a critical value  $H_K$  at which a sudden rise of  $\lambda$

begins. Gadolinium whose ferromagnetism was discovered early has always been considered as a "normal" ferromagnetic. However, the authors have discovered that in weak fields there are anomalies in the temperature behavior of magnetization (Fig. 6), coercive force  $H_c$  (Fig. 7), and residual

magnetization (Fig. 8). It may thus be concluded that a temperature exists for Gd (similar to the 21°C point for Ni and the 294°C point for Co) at which a temperature anomaly of  $\lambda$  and  $H_c$  exists. Contrary however,

to Ni and Co, Gd shows two singularities in the behavior of magnetic properties near the Curie point (0-90° K). The curvature of the curve show-

Card 3/9

25182

S/056/61/040/006-001/03

B\*02/B2\*4

The magnetic and magneto-elastic properties of . . .

ing the decrease of magnetization with temperature is very small and can be determined from the formula:  $\sigma_s/\sigma_s^0 = \xi T/\theta$  For Ni and Fe  $\xi = 6 \times 10^{-4}$ ;

for Gd,  $\xi = 1.1 \times 10^{-4}$ . Such a small  $\xi$ -value is characteristic of ferrite and some alloys (cf. Table 1). The existence of anomalous behavior of Gd (as compared to Ni and Fe near 0) is due to the presence of an antiferromagnetic phase in this region of temperature which, however, can be destroyed by weak fields. The authors thank Professor Ye. M. Savitskiy, V. F. Terekhova and I. V. Burav for preparing the Gd sample and A. S. Borovik Romanov for discussions. There are 12 figures, 1 table, and 12 references: 4 Soviet-bloc and 8 non-Soviet-bloc. The most important references to English-language publications read as follows: J. Elliot et al. Phys. Rev. 94, 1143, 1954; D. Behrendt et al. Phys. Rev. 109, 1544, 1958.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

Card 4/9

S/126/62/013/001/001/001  
EO39/E535

AUTHORS: Belov, F.P. and Nikitin, S.A.  
TITLE: The galvanomagnetic properties of terbium, dysprosium and holmium  
PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.1, 1962, 43-48  
TEXT: Measurements of magnetic moment show that the rare earth metals have transition temperatures  $\theta_1$  for antiferromagnetic-paramagnetic and  $\theta_2$  for ferromagnetic-antiferromagnetic. Hence, the influence on electrical properties of the transition from a state of non-ordered spin to an ordered one can be studied on these metals. Values of  $\theta_1$  and  $\theta_2$ , originally published by S. Legvold, F. Spedding et al., are:

Table 2

Element	$\theta_1$ , °K	$\theta_2$ , °K
Dy	85	178.5
Tb	219	229
Ho	20	133

Card 1/3

The galvanomagnetic properties ... S/126/62/017/644/0-1/00  
EG39/E535

Measurements of electrical and galvanomagnetic properties were made on samples of Dy, Tb and Ho ( $0.4 \times 1 \times 9$  mm and  $0.4 \times 2.2 \times 20$  mm). Electrical resistance was measured over the temperature range 60-300°K using a potentiometric method, a constant current of 100 mA being passed through the sample. It is shown that there is a discontinuity in the resistance-temperature curves at  $T_2$ . The temperature dependence of the longitudinal and transverse galvanomagnetic effect was measured for Dy, Ho and Tb for magnetic fields up to 15000 Oe and it is shown that the galvanomagnetic effect passes through a marked negative maximum near  $T_2$ . In addition, in the case of Dy a second maximum is observed at  $T_1$ . The transition temperatures  $T_1$  and  $T_2$  for Dy are very close together, 219 and 229°K, respectively, so that only one maximum is obtained. Isotherms are plotted showing the change in longitudinal and transverse galvanomagnetic effect with rate of magnetic field for a number of temperatures. It is shown that the temperature dependence of the slope of the isotherm  $dR/R.dH$  for Tb exhibits two maxima at 232°K and 224°K. This verifies the assumption that Tb possesses weak antiferromagnetic properties.

Card 2/3

The galvanomagnetic properties ... S/126/62/013/001/001/018  
EO39/E535

between 224 and 232°K. There are 9 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni  
M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 31, 1961

Card 3/3

S/056/62/042/CC2/C16/055  
B102/B138

AUTHORS: Belov, K. P., Nikitin, S. A.

TITLE: Effect of helical magnetic structure on the magnetostriction of dysprosium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v 42, no. 2, 1962, 403-407

TEXT: Dysprosium has two magnetic transformation temperatures.  $\theta_1$  (85°K) at which the helical magnetic structure arises and  $\theta_2$  (177°K) at which ferromagnetism of the basal planes vanishes, together with the helical magnetic structure. The lower temperature range has been studied previously (K. P. Belov et al. ZhETF, 40, 1562, 1961); it was found that below  $\theta_1$ , where the Dy crystal is ferromagnetic, and also between  $\theta_1$  and  $\theta_2$ , the

considerable anisotropy of magnetostriction is due to spontaneous magnetostriction. In continuation of these studies the range 120-190°K was here investigated. The magnetostriction observed on approaching  $\theta_2$  will be caused by other kinds of spontaneous magnetostriction. The measurements were made with polycrystalline specimens and in magnetic  
Card 1/6

Effect of helical magnetic

S/056/62/042/002/016/055  
B102/B138

fields in which the magnetic moments remained in the basal planes during magnetization. Magnetostriction was measured with a wire strain gage. The isotherms of transverse ( $\lambda_{\perp}$ ) and longitudinal ( $\lambda_{\parallel}$ ) magnetostriction between 0 and 15 koe were measured for several temperatures. It can be seen that for fields below critical  $\lambda_{\perp}$  is negative and  $\lambda_{\parallel}$  positive. The temperature dependences of  $\lambda_{\perp}$  and  $\lambda_{\parallel}$  differ in shape, and their positions depend on whether H is stronger or weaker than  $H_{crit}$ . This is due to the fact that in this temperature range, besides magnetostriction corresponding to rotation of magnetic moments in the basal plane layers, there also exists a magnetostriction concomitant with destruction of the helical magnetic structure for  $H = H_{crit}$ . Around  $\Theta_2$  an intense paraprocess magnetostriction arises which is caused by exchange forces between atoms in adjacent basal planes. A S Borovik-Romanov is thanked for discussions. There are 5 figures and 6 references, 2 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: D. Behrendt et al. Phys. Rev. 109, 1544, 1958. M. Wilkinson et al. J. Appl. Phys. 32 49, 1961; suppl. to 3. U. Enz. J. Appl. Phys. 32, 22, 1961, suppl. to 1.

Card 2/6

Effect of helical magnetic ...

9/056/62/042/002/016/055  
B102/B138

J. Banister et al. Phys. Rev. 94, 1140, 1954.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: September 14, 1961

Fig. 1. Isotherm of  $\lambda_{\perp}$

Fig. 2. Isotherm of  $\lambda_{\parallel}$

Fig. 4. Temperature dependence of  $\lambda_{\parallel}$  for 7500 oe (1) and 15 koe (2)

Fig. 5. Temperature dependence of  $\lambda_{\perp}$  for 7500 oe (1) and 15 koe (2)

Card 3/8



S/056/62/C43/CC1/CC5/C56  
B125/B102

AUTHOR: Nikitin, S. A.

TITLE: Magnetostriction of Tb and Ho

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,  
no. 1(7), 1962, 31-34

TEXT: The magnetostriction of terbium and holmium disks was measured in magnetic fields of up to 15 koe, using wire-type resistance strain gauges. The helicoidal magnetic structure of Ho ( $H_{crit} = 17$  koe) was only slightly distorted by a magnetic field of 15 koe. The magnetostriction has the same character as that of ordinary antiferromagnetic materials. It is weak ( $\lambda_H = 5 \cdot 10^{-6}$  at 80°K and 15 koe), anisotropic ( $\lambda_H > 0$ ,  $\lambda_{\perp} < 0$ ), and monotonically decreases on approaching  $\theta_2 = 133^\circ\text{K}$ . The very intense magnetostriction ( $\lambda_H = 750 \cdot 10^{-6}$ ,  $\lambda_{\perp} = -460 \cdot 10^{-6}$  at 85°K) of the ferromagnetic  $\gamma$  phase of Ho at  $T < \theta_1 = 219^\circ\text{K}$  may be caused by ordinary processes of displacement and rotation and decreases on approaching  $\theta_1$ . Here  $\lambda_H > 0$

Card 1/3

Magnetostriction of Tb and Ho

S/056/62/043/001/005/10  
B125/B102

and  $\alpha_1 < 0$ . As the energy changes only slightly when the helical magnetic structure is destroyed, this destruction in the temperature range  $\theta_1 - \theta_2$  is not accompanied by any noticeable magnetostriction. In the temperature range  $\theta_1 - \theta_2$  of transition from antiferromagnetism to paramagnetism ( $\theta_2 = 230^\circ\text{K}$ ), the magnetostriction of the paraprocess that occurs during the rotation of the magnetic moments of the disk is much more intense than the helicoidal magnetostriction. Near  $\theta_2$  the transverse effect  $\alpha_2$  vanishes almost entirely whereas the longitudinal effect  $\alpha_1$  is very intense. The first of the two linear sections of the dependence  $\alpha_1$  on the square of specific magnetization of terbium corresponds to the rotation of the magnetic moments of the disk. The second section is related to the paraprocess and corresponds to magnetization in a strong field. The magnetostriction of the paraprocess in terbium depends on the crystallographic direction and on the direction of magnetization. A dependence on the latter was hitherto unknown and is due to the hexagonal structure of the lattice with strong anisotropy of the exchange interaction. There are 4 figures.

Card 2/3

Magnetostriction of Tb and Ho

S/C56/62/C43/OC1/CC5/C56  
B125/B102

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State  
University)

SUBMITTED: February 12, 1962

Card 3/3

S.  
NIKITIN, ~~A.~~ A., PEDKO, A. V., and BELOV, .K. P., LEVITIN, R. S.,

"Magnetoelastic Properties of Rare Earth Ferromagnets"

report presented at the Symposium on Ferroelectricity and Ferromagnetism,  
Leningrad, 30 May-5 June 1963.

S/126/63/015/002/005/033  
E039/2420

AUTHOR: Nikitin, S.A.

TITLE: Magnetic and hysteresis properties of dysprosium and terbium

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.2, 1963, 187-193

TEXT: The temperature dependence of the residual magnetization and coercive force  $H_c$  are studied in Dy and Tb. Samples were cylinders 3 mm diameter and 37 mm long with an impurity content of less than 0.5%. Measurements were made by the ballistic method in fields up to 3250 Oe. A maximum on the  $H_c(T)$  curves is observed near the transition temperature  $\theta_1$  ferromagnetic-helicoid antiferromagnetic, i.e. at 95°K for Dy and 219°K for Tb. The residual magnetization in Dy and Tb decreases monotonically with increasing temperature and decreases strongly near to the corresponding transition temperature  $\theta_1$ . There are 5 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni

SUBMITTED: June 4, 1962 M.V.Lomonosov)

Card 1/1

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ACCESSION NR: AP3005237

S/0056/63/045/002/0026/0028

AUTHORS: Belov, K. F.; Nikitin, S. A.; Ped'ko, A. V.

64  
63

TITLE: Shift of the ferromagnetism-antiferromagnetism transition point in dysprosium under the effect of uniform pressure

SOURCE: Zhur, eksper. i. teoret. fiz., v. 45, no. 2, 1963, 26-28

TOPIC TAGS: ferromagnetism-antiferromagnetism transition, dysprosium, hydrostatic pressure

ABSTRACT: An attempt was made to observe the shift of the ferromagnetism-antiferromagnetism point of dysprosium under the influence of a hydrostatic pressure of 1800 atmospheres. The observed shift in a 3100 Oe field was about  $7^{\circ}$  towards the lower temperatures and is ascribed to the influence of the change in the interatomic distances on the exchange interaction between the atoms in the basal plane of the dysprosium hexagonal lattice. The maximum of the coercive-force curve shifts by the same amount. An analogous behavior of gadolinium is pointed out, but the data available are not sufficient for a detailed interpretation. Orig. art. has 3 figures and 3 formulas.

Association: Moscow State University

Card 1/2/

BELOV, K.P.; LEVITIN, R.Z.; NIKITIN, S.A.

Ferromagnetism and antiferromagnetism in rare-earth metals.

Usp. fiz. nauk 82 no.3:449-498 Mr '64.

(MIRA 17:4)

NIKITIN, S.I., dotsent

Drastic improvement of the solonetz soil complex in the zone of  
the chestnut soil steppes of the lower Volga Valley. Uch.  
zap. Volg. gos. ped. inst. no.10:132-164 '59. (MIRA 14:11)  
(Volga Valley--Solonetz soils)



NIKITIN, S.I., dotsent

Soil classification of the solonetz-type soil formation.

Uch. zap. Volg. gos. ped. inst. no.10:165-174 '59.

(MIRA 14:11)

(Solonetz soils)

NIKITIN, Sergey Il'ich, dots.; FEDOROV, N.A., red.; IZHBOLDINA, S.I., tekhn.  
red.

[Improvement of Solonetz soils] Melioratsiia pochv solontsovogo kompleksa. Stalingrad, Stalingradskoe knizhnoe izd-vo, 1960. 209 p.  
(MIRA 14:9)

(Volga Valley—Solonetz soils)

NIKITIN, S K

Name: NIKITIN, S. K.

Dissertation: The history of the Kazan Military Hygiene Society

Degree: Cand. Med Sci

*Defended at*  
~~Publication~~

Kazan' State Medical Inst, Chair of the Organization  
of Public Health from the History of Medicine

*Publication*

~~Defense~~ Date, Place: 1956, Kazan'

Source: Knizhnaya Letopis', No 47, 1956

NIKITIN, S.K., kand.med.gig (Kazan )

Professor Lev L'vovich Levshin (1842-1911); on the 50th  
anniversary of his death. Kaz. med. zhur. no.5:86-89 S-C '61.  
(MIRA 15:3)

(LEVSHIN, LEV L'VOVICH, 1842-1911)

NIKITIN, S.F., kand. mek. nauk

Professor Petya Borisovna Nikitina, born 1913, 80th anniversary of her birth. zav. mek. zhuk. n. 1963. N-D 163.

1. Kafedra organizatsii zapov. upravleniya i teorii (zav. - prof. T.I. Epimachev) (kazanskaya shkola).

NIKITIN, S.K.; TRIBUKH, L.L.

Use of automatic control and remote control on railroads of large industrial enterprises. Avtom., telem. i svyaz' 7 no.2:7-9 F '63.  
(MIRA 16:3)

1. Nachal'nik otдела signalizatsii, tsentralizatsii i blokirovki, Gosudarstvennogo proyektного instituta po proyektirovaniyu stroitel'stva promyshlenno-transportnykh sooruzheniy (for Nikitin). 2. Rukovoditel' brigady otдела signalizatsii, tsentralizatsii i blokirovki Gosudarstvennogo proyektного instituta po proyektirovaniyu stroitel'stva promyshlenno-transportnykh sooruzheniy (for Tribukh).  
(Railroads—Signaling) (Railroads—Electronic equipment)

NIKITIN, S.S.

Most important topic of the report is the history of the  
medical institutions for the past 150 years of activity in the  
Kazan Medical Institute (1844-1964). Kazan. Med. Inst. med.  
med. inst. 18:45-46 (1964).

1. Kazan. med. inst. 18:45-46 (1964).  
1. Kazan. med. inst. 18:45-46 (1964).  
1. Kazan. med. inst. 18:45-46 (1964).  
1. Kazan. med. inst. 18:45-46 (1964).

NIKITIN, S. M.; SHCHERBAKOV, V. M.

Using plastic materials in road construction. Avt. dor. 23 no.8:24-  
25 Ag '60. (MIRA 13:8)

(Road construction) (Plastics)



**PLEASE I DON'T EXPLOITATION**

1248/108

Ingulskiy, Dmitry Alexandrovich, Faculty Pedagogical School, Academy of Sciences  
Soviet Pedagogical Academy, Philip Yeliseyevich Zaytsev, Moscow  
Soviet Pedagogical Academy, and Sergey Aleksandrovich Blinnikov

Исследования и проектирование автоматизированной (для селекционной и планировки АРП) (Sieve Selection and Planning of ARP) Moscow, Avtoizdatstat, 1959. 366 p. Extra slip inserted. 1,000 copies printed.

Ed.: (title page): V.J. Babler, Doctor of Technical Sciences, Professor, Ed.  
(Inside book): V.O. Chervov; Tech. Ed.: B.V. Mel'kova.

**NOTE:** This textbook is intended for students of schools of higher education specializing in airfield-construction engineering and students of technical schools and other schools studying airfield construction. It may also be used by students of universities studying airfield planning, construction, and operation.

**COMMENT:** The book deals with the principal requirements for airfield design and construction. The topics discussed include landing-strip dimensions, relief and drainage patterns, airfield design and construction of runways and pavements. Airfield site selection is also undertaken. The book incorporates various methods

**Case 4/15**

used in the USSR and other countries and development trends in artificial seed and planting. Section 3, Chapter 2, Section 18, Chapter 5, Chapters 21 to 26 (excluding Section 26), Chapter 2, Section 18, Chapter 5, Chapters 21 to 26 (excluding Sections 18, 19, and Section 26) and Chapter 26 to 30 were written by V.Y. Babkov, Chapters 1, 15, and Section 9, Chapter 26 were written by Candidates of Technical Sciences L.S. and A.M. Alimov. The Introduction, Chapters 1 to 5 (excluding Sections 18, 19, and 26), Chapters 8 to 10, and Chapter 20 were written by Doctor D.Y. Belitskiy. Chapters 11, 19, and 25 to 32 were written by Candidates of Technical Sciences A.B. Salimov; Chapters 16 and 17, by Candidate of Technical Sciences P. Ya. Zayarny; Chapter 6, by P. Ya. Zayarny and A.S. Salimov; Chapter 31, by Candidate of Technical Sciences V. Ya. Zayarny; and Section 21, Chapter 5, and Chapter 7, by Doctor S.M. Yelitsin. Reviewers are Professor A.L. Kurlyayev, staff members of an artificial seed production under the direction of Candidates of Technical Sciences P.A. Dolgin and the leading V.S. Artyukov, V.A. Kuznetsov, A.O. Pechikov, A.A. Popov, and I.O. Pechikov, a team of instructors from the Dnieper branch scientific production unit (Dnieper Hydroelectric and Heavy Industry Institute), the Section of Professor L.A. Romanov and Candidate of Technical Sciences A.L. Zayarny, A. Ya. Salimov, and Ye. A. Zayarny. There are no references.

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BOOK EXPLOITATION

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Mogilevskiy, Dmitriy Aleksandrovich; Babkov, Valeriy Fedorovich; Smirnov, Andrey  
Sergeyevich; Abramov, Leonid Tikhonovich; Zaytsev, Filipp Yakovlevich; Zam-  
khayev, Mitrofan Semenovich; Nikitin, Sergey Mikhaylovich

Surveying and planning of airfields (Izyskaniya i proyektirovaniye aerodromov)  
2d ed. Moscow, "Avtotransizdat", 1963, 703 p. illus., biblio. charts. 2,700  
copies printed.

TOPIC TAGS: airfield engineering, runway construction, structural engineering,  
general construction

PURPOSE AND COVERAGE: The book presents the basic problems and principles of air  
field planning and construction. The requirements of airfields are stated in  
terms of dimensions, land contour, drainage, surfaces, and sub-surfaces. The  
book then discusses the basic construction and engineering methods developed to  
meet these requirements. The book concludes with an explanation of how to make  
surveys and draw up plans for prospective air field sites.

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